

Test Year Wrap Up

RA Reform Workshop

9/29/2022

Agenda

Demand Response under Slice of Day
LOLE and PRM Proposal and Example
LSE Showing Example

Demand Response Resource Hourly ELCC

- DR programs with no residual performance/snap back can be treated like other use limited resources
 - Hourly ELCC profile, starting hour, ending hour, and daily hour limits
 - LSEs can choose which hours to show within resource capabilities
 - Much like a use-limited peaker
- DR programs with residual performance/snap back should have fixed shapes reflecting the expected performance
 - Fixed shapes based on a specific call window for a 1-2 monthly peak day

	HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19	HE20	HE21	HE22	HE23	HE24
Non-Snapback DR	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	4.00	4.00	4.00	4.00	3.00	0.00	0.00
Snapback DR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	3.00	3.00	4.00	4.00	4.00	-5.00	-3.25	-1.69	-0.52

LOLE and PRM

Energy for What's Ahead®

PRM Setting Prerequisites

- Load Forecast
 - To derive stochastic load scenarios for LOLE
 - Setting PRM relative to load forecast
- LOLE Study Results
 - Volume and mix of resources deemed to result in a reliable system
- RA Resource Counting Rules
 - Single monthly today
 - Slice-by-slice in future
- System RA Showing Rules
 - Portfolio limits / MCC buckets
 - Excess RA capacity for stand-alone storage

Notes

- The load forecast underlying the LOLE modeling should be the same as used to derive the PRM
- Ideally the daily use limits incorporated in slice-of-day would be reflected in the LOLE model
 - Hourly limits for emissions limited peakers
 - Call hour limits for HR
 - Cycling restrictions for stand-alone storage
 - Etc

Steps to set PRM from an Annual LOLE Study

1. Determine volume and mix of resources that achieves reliability and other targets (Iterative LOLE process)
 - Use best available CPUC LOLE analysis
2. Convert nameplates and characteristics to slice-of-day counting (hourly ELCC, daily limitations, etc)
3. Create system-level 24-Hourly-Slice RA stack consistent with steps 1 and 2 that achieves the maximum PRM possible on the highest load day while satisfying slice-of-day requirements
4. Resulting PRM becomes the RA PRM

PRM Setting Example

1. Comparison with NRDC's PRM Calibration Tool
2. SCE's PRM Setting Tool sent to service list on 9/22
 - SCE's example based on full slice of day model using the proposed compliance databases and tools
 - Any resource modeled in SERVIM or Plexos can be represented in the SCE PRM model
 - Requires basic characteristics and relevant maximum capacity/hourly ELCC shape

Slice of Day Model and LSE Showing

Energy for What's Ahead®

Key Elements of LSE RA Showings

- Contracted and shown Resource Adequacy capacity enough to cover System RA requirement in each slice
- Resources shown within capabilities listed in RA Resource Master Database and ELCC shape Database
- Flex and Local single-monthly requirements satisfied with System showing resources
- Excess Resource Adequacy capacity greater than stand-alone storage capacity requirements
- RA Portfolio passes all CPUC validation tests

Slice of Day Model and LSE Showing Excel Example

- Excel example: SCE's Slice of Day Model sent to service list on 9/22